

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1 - 6. (canceled).

7. (currently amended): A process for preparation of a stimuable phosphor represented by the formula (I):



in which A is at least one element selected from the group consisting of Ce, Pr, Nd, Sm, Eu, Tb, Dy, Ho, Er, Tm, and Yb; L is at one element selected from the group consisting of Zr, Nb, Hf, Ta, Sn, Sm, Tm and Yb, provided that L differs from A; x, y and z are numbers satisfying the conditions of $0 \leq x$, $0 \leq y$, $0 \leq z$ and $1.5 \leq x+y+z \leq 2.2$; p is a number to neutralize the phosphor in regard to electric charge thereof, a is a number satisfying the condition of $2 \times 10^{-5} < a < 6 \times 10^{-2}$, and b is a number satisfying the condition of $0 \leq b < 1 \times 10^{-2}$, in which the stimuable phosphor absorbs and stores a portion of energy of radiation or ultraviolet rays when it is exposed to the radiation or ultraviolet rays, and emits stimulated light in a visible wavelength region when exposed to electromagnetic waves;

which comprises the steps of:

(1) heating a rare earth carboxylate represented by the formula (II)



in which M is at least one rare earth element selected from the group consisting of Lu, Y and Gd;
R¹ is an aliphatic hydrocarbon group having 1 to 4 carbon atoms which has a substituent or no substituent; and m is a number satisfying the condition of $0 \leq m \leq 4$;

with an alkoxyalcohol represented by the formula (III), to obtain a solution:



in which R² is an aliphatic hydrocarbon group having 1 to 4 carbon atoms or a substituted aliphatic hydrocarbon group having 3 to 6 carbon atoms; and n is 2 or 3;

(2) adding to the obtained solution a silicon alkoxide represented by the formula (IV):



in which R³ is an aliphatic hydrocarbon group having 1 to 4 carbon atoms and a compound containing the element represented by A, and if required a compound containing the element represented by L, to prepare a mixture;

(3) bringing water into contact with the prepared mixture to give a gel; and

(4) subjecting the given gel to thermal decomposition under slightly reductive atmosphere.

8. (original): The process of claim 7, wherein R¹ in the formula (II) is methyl.

9. (original): The process of claim 7, wherein the alkoxy-alcohol represented by the formula (III) is at least one compound selected from the group consisting of 2-methoxyethanol, 2-ethoxyethanol, 1-methoxy-2-propanol, 1-ethoxy-2-propanol and 3-ethoxy-1-propanol.

10. (original): The process of claim 7, wherein R^3 in the formula (IV) is ethyl.

11. (previously presented): The process of claim 7, comprising the steps of

(1) heating a rare earth carboxylate that is an acetate of at least one element selected from the group consisting of Lu, Y, and Gd with at least one alcohol that is an alkoxyalcohol selected from the group consisting of 2-methoxyethanol and 2-ethoxyethanol, to obtain a solution;

(2) adding to the obtained solution a silicon alkoxide that is tetraethoxysilane and a compound containing the element represented by A, and if required a compound containing the element represented by L, to prepare a mixture; and

(3) bringing water into contact with the prepared mixture, to give a gel; and

(4) subjecting the given gel to thermal decomposition.

12. (previously presented): The process of claim 7, wherein the phosphor is represented by the following formula (V):



in which A is A' and is at least one element selected from the group consisting of Ce and Tb; L is L' and is at least one element selected from the group consisting of Zr, Hf, Sm and Yb, provided that L' differs from A'; x is a number satisfying the condition of $1.5 \leq x \leq 2.2$; y is zero; z is zero; p

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is a number to neutralize the phosphor in regard to electric charge thereof, and a is a number satisfying the condition of $2 \times 10^{-5} < a < 6 \times 10^{-2}$; and b is a number satisfying the condition of $0 \leq b < 1 \times 10^{-2}$.